

FIG. 1 Prior Art

The diagram illustrates a network protocol stack with two parallel paths. Each path consists of three layers:

- 3 Network layer** (containing **CONNECTION VARIABLES** and **CONNECTION LOGIC**)
- 2 DATALINK LAYER** (containing **EDC LOGIC**, **EDC VARIABLES**, and **LINK CONTROL**)
- 1 Physical layer**

Data flow is indicated by arrows:

- Outgoing Network Frames (NF)** and **Incoming Network Frames (NF)** flow between the Network layer and the Datalink layer.
- Outgoing Data Frames (FRAME)** and **Incoming Data Frames (FRAME)** flow between the Datalink layer and the Physical layer.
- A double-headed arrow labeled **BITS** connects the Physical layers of both paths.

Reference numbers 10, 20, and 30 are placed next to the Network, Datalink, and Physical layers respectively on both sides.

Flh. 2 PRIOR ACT

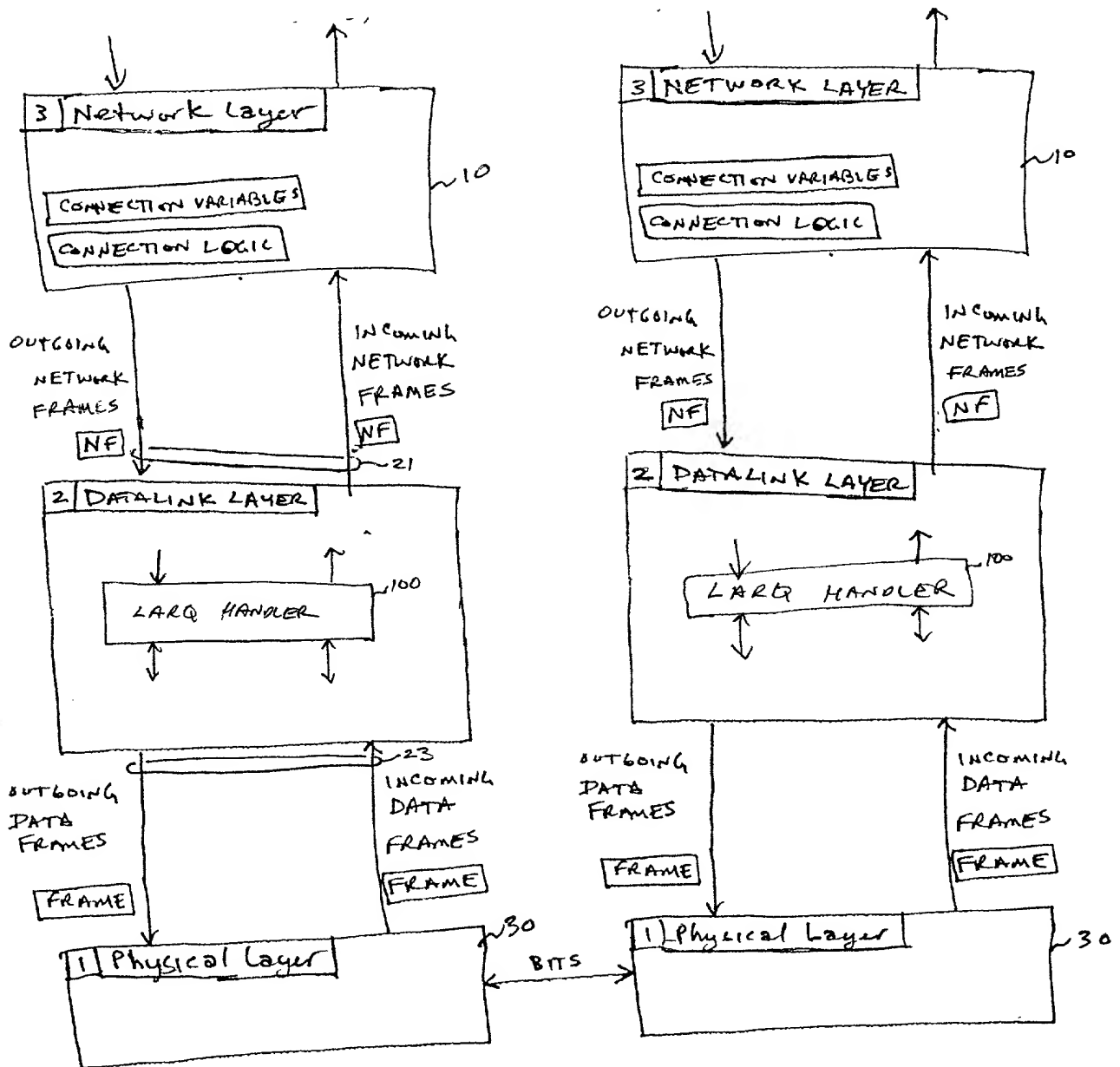


FIG. 3

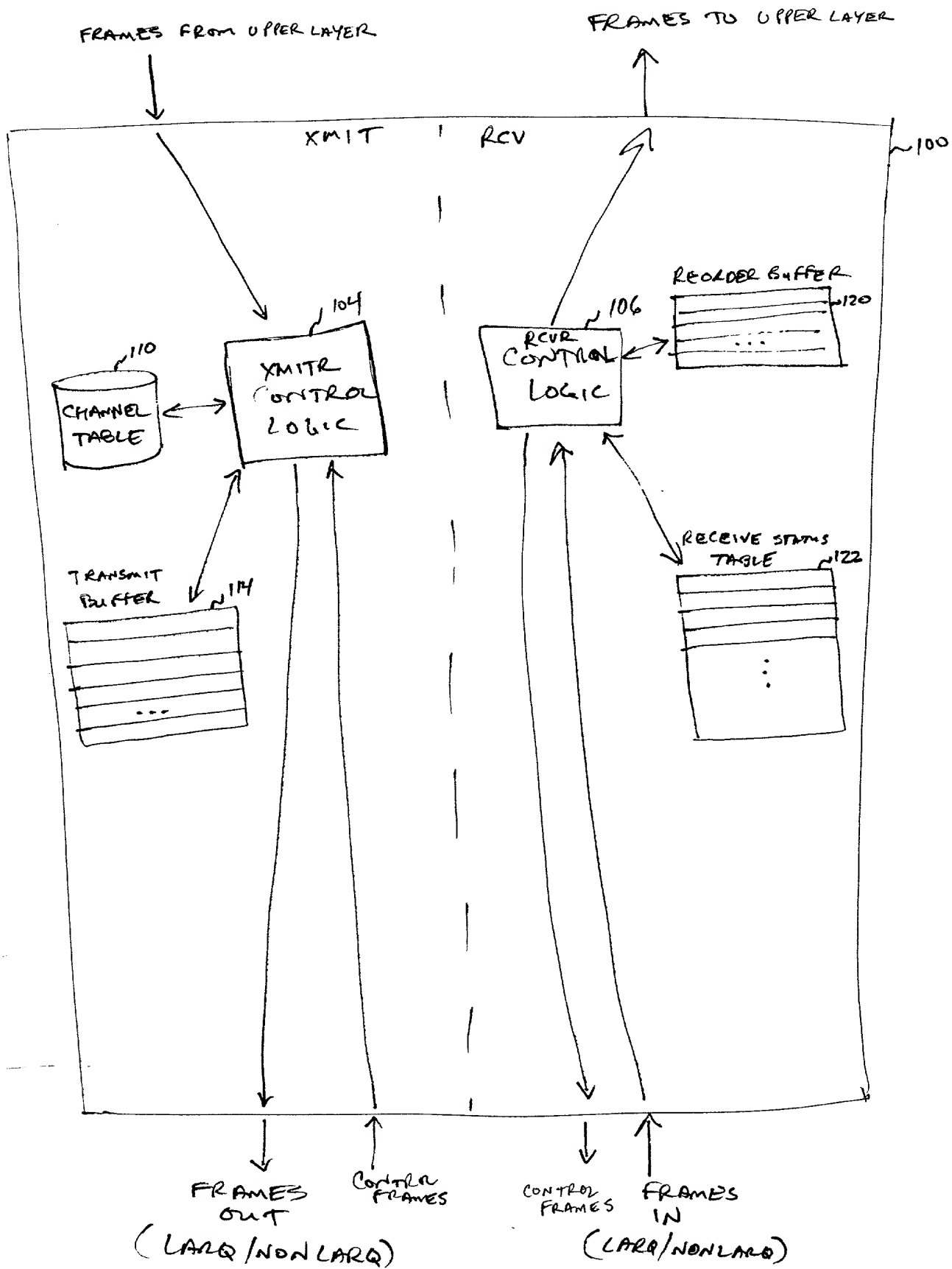


FIG. 4

6 bytes	6 bytes	2 bytes	0-1500 bytes	4 bytes
Destination MAC Address	Source MAC Address	Type/Length	Ethernet Payload	FCS (CRC-32)

FIG. 5 (PRIOR ART)

6 bytes	6 bytes	8 bytes	2 bytes	0-1500 bytes [or less if physical layer cannot support extra bytes]	4 bytes
Destination MAC Address	Source MAC Address	LARQ Header	Type/Length	Ethernet Payload	FCS (CRC-32)

Ethertype	Subtype	Len	LARQ Ver.	Rsv	Nack	Ctl	Pri	Rsv	Seq #
0x886c	0x10	xxxx xxxx	xxxx xxxx	0	xxx	0	xxx	0x00	xxxx xxxx
16 bits	8 bits	8 bits	8 bits	1 bit	3 bits	1 bit	3 bits	8 bits	8 bits

FIG. 6

6 bytes	6 bytes	8 bytes	0-?? bytes
Destination MAC Address	Source MAC Address	LARQ Header	Pad to minimum size if needed

Ethertype	Subtype	Len	LARQ Ver.	Rsv	Nack	Ctl	Pri	Rsv	Seq #
...	000	1	xxx	...	xxxx xxxx

FIG. 7

6 bytes	6 bytes	6 bytes	6 bytes	6 bytes
Destination MAC Address	Source MAC Address	LARQ Header	Nack Extension	Pad to minimum size if needed (0-38 bytes)

Ethertype	Subtype	Len	LARQ Ver.	Rsv	Nack	Ctl	Pri	Rsv	Seq #
...	xxx	1	xxx	...	xxxx xxxx

FIG. 8

CHANNEL STATE INFORMATION TABLE

SenderID	DestinationID	Pri	Channel Type	Cur Seq	Oldest Seq	Frame Table	...
2.0.7.0.0.3	ff.ff.ff.ff.ff	1	SENDER	34	34		
2.0.7.0.0.3	3.0.4.0.3a.77	1	SENDER	131	120		
3.0.4.0.3a.77	2.0.7.0.0.3	1	RECEIVER	78	78		
...							

FIG. 9(a)

SENDER FRAME STATE TABLE

Seq #	Frame Pointer	Send Time	Retransmit Time
17	xxx	10:23:27:222	--
18	xxx	10:23:27:223	--
19	xxx	10:23:27:240	10:23:27:250
20	xxx	10:23:27:245	
21	xxx	10:23:27:258	
...			

FIG. 9(b)

RECEIVER FRAME STATE TABLE

Seq #	Frame Pointer	Miss Time	Nack Req Time	Receive Time
17	xxx	--		10:23:27:223
18	xxx	--		10:23:27:223
19	xxx	10:23:27:245	10:23:27:45	10:23:27:251
20	xxx	--		10:23:27:245
21	xxx	--		10:23:27:259
...				

FIG. 9(c)

FIG. 10

FIG. 11

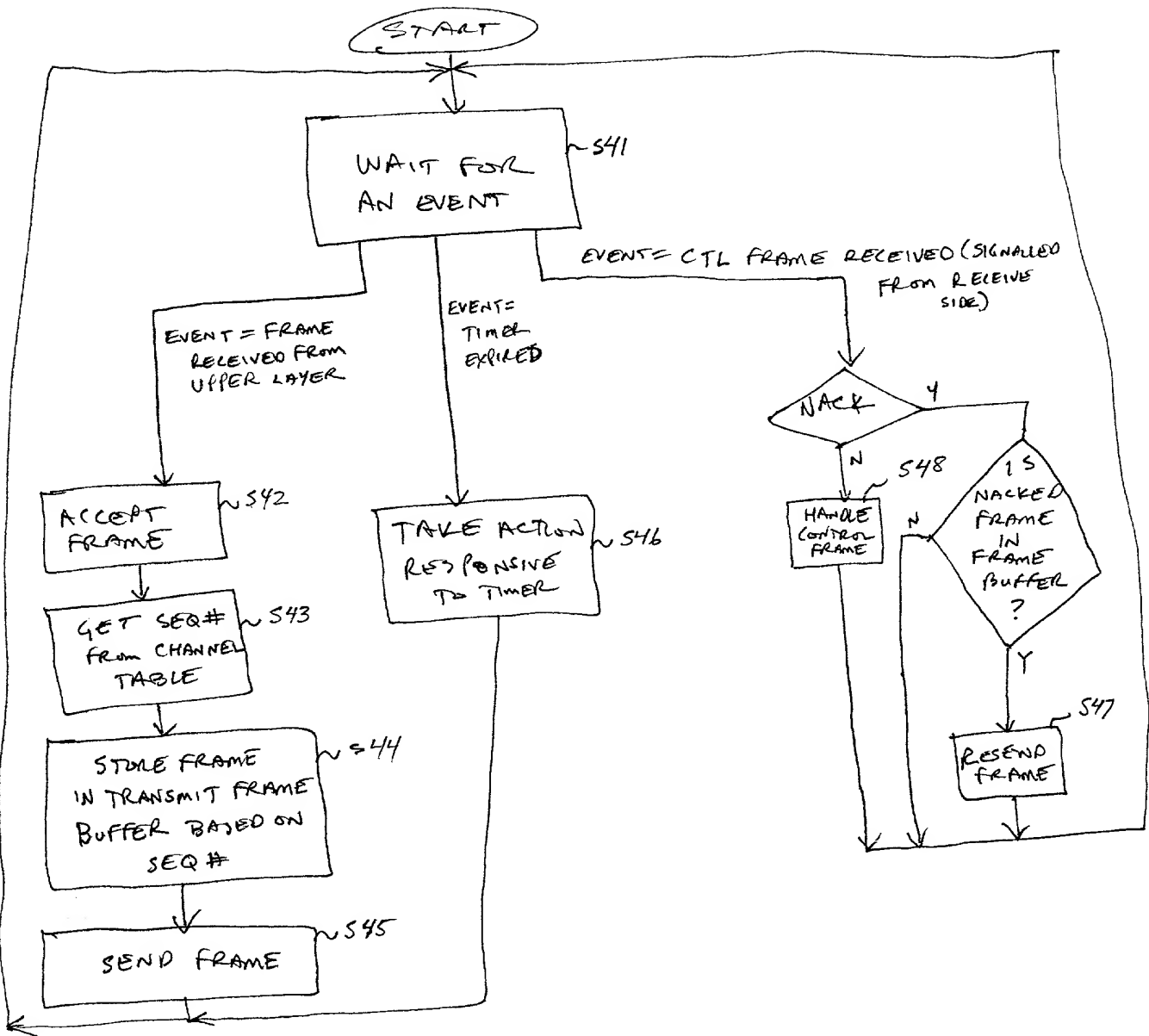
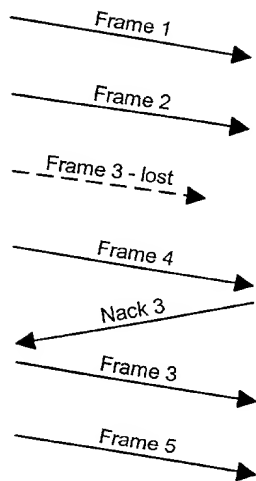


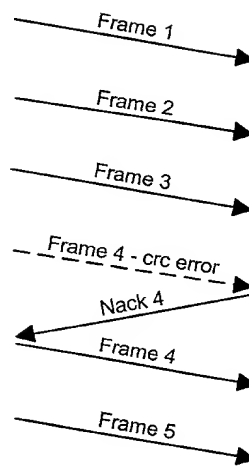
FIG. 11

Sender Receiver



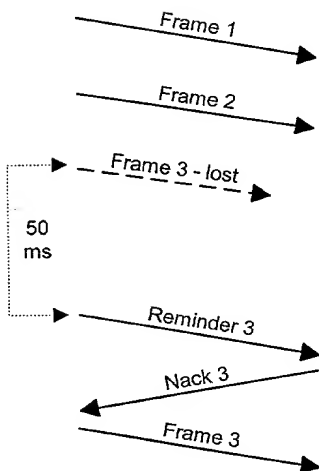
Basic lost frame.

Sender Receiver



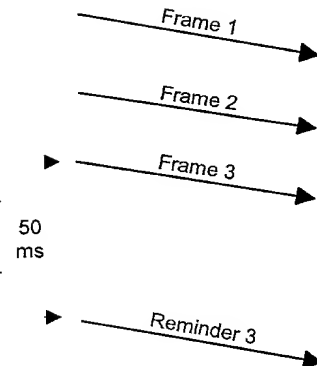
Errored frame

Sender Receiver



Trailing lost frame plus reminder

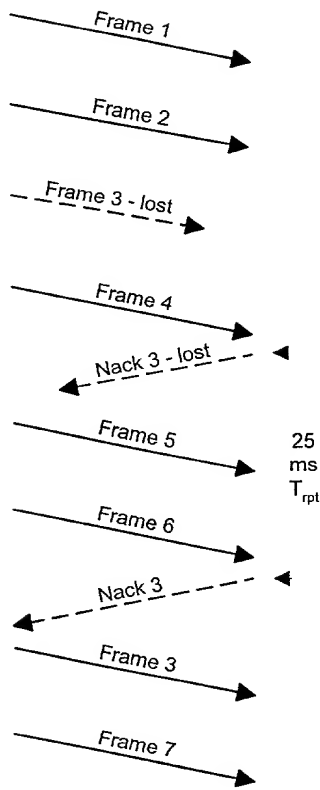
Sender Receiver



Normal last frame plus reminder

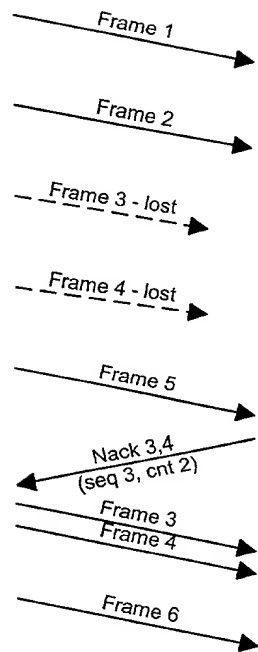
FIG. 12

Sender Receiver



Lost frame plus lost nack

Sender Receiver



Multiple lost frames

FIG. 13

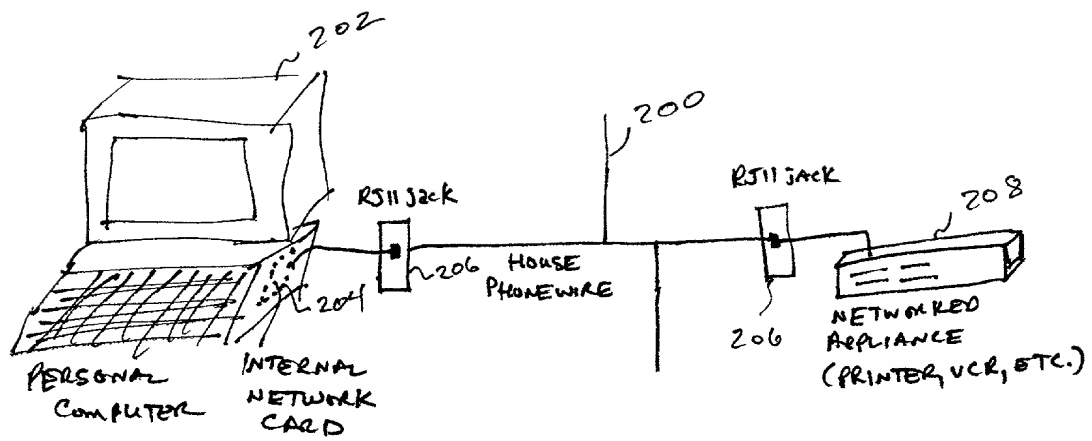


FIG. 14

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